The Role of Waterborne Transport Infrastructure in Biodiversity Enhancement

PROPOSED TECHNICAL WORKING GROUP

TERMS OF REFERENCE

1. Historical Background Definition of the problem

Biodiversity incorporates the variety of life and how it interacts. With this variety there is resilience to change be it natural or anthropogenic. However, the living planet index shows a **decline of 73%** in observed population sizes of vertebrate species between 1970 and 2010. Yet decisions are still being made on infrastructure projects and the use of resources that affect biodiversity. Added to this pressure is climate change which is putting additional stress on a planet in crisis.

It is recognised that the transportation of goods is crucial as well as the need to sustainably maintain our waterways and related navigation infrastructure to ensure that those goods can reach the people that need them in a responsible manner. Increasing development of navigation infrastructure can have an increasing impact on biodiversity but this effect can be reduced, or even countered, with effective pre-emptive design, implementation of mitigation, compensation and, most importantly, enhancement measures.

The focus of this Working Group is to look at waterborne transport infrastructure developments from a biodiversity (enhancing) perspective, aligning them with global and national commitments and provide guidance on integrating effective measures into navigation infrastructure from the start.

2. Objectives

The objective of the proposed Working Group is to produce a report that identifies solutions to enhance biodiversity (including aquatic and terrestrial habitats) when considering projects to plan, maintain, or upgrade waterborne transport infrastructure. The Working Group is not intended to provide guidance on 'conservation' of existing biodiversity as there is an assumption that this is achieved through national and international regulation.

The aim of the Working Group is to provide the frameworks and tools for people working in the field of waterborne transport infrastructure development to enhance biodiversity to enable them to contribute to sustainable development. The Working Group will also draw from existing approaches and biodiversity best practices worldwide, including:

- Habitat restoration and enhancement and ecosystem service approaches
- Sediment dredging and beneficial use opportunities
- Climate change adaptation, strengthening the resilience of both navigation and nature

- Applying Working with Nature and nature-based solutions
- Involvement of local communities to support the long-term development of sustainable biodiversity.

3. Earlier reports to be reviewed

The report will link to other relevant reports published by PIANC, CEDA, and IADC, among others. This will include reports and white papers on Working with Nature, Climate Change and Blue Carbon.

- Guidelines for Sustainable Recreational Navigation Infrastructure (RecCom WG 148)
- Sustainable ports – A Guide for Port Authorities (EnviCom WG 150)
- Guide for Applying Working with Nature to Navigation Infrastructure Projects (EnviCom WG 176)
- Climate Change Adaptation Planning for Ports and Inland Waterways (EnviCom WG 178)
- Carbon management for Port and Navigation Infrastructure (EnviCom WG 188)
- An Introduction to Applying Ecosystem Services for Waterborne Transport Infrastructure Projects (EnviCom WG 195)
- Beneficial use for Sustainable Waterborne Transport Infrastructure Projects (EnviCom WG 214)
- Green financing of Nature-Based Navigation Infrastructure (EnviCom WG 230)
- Understanding Blue carbon – A practical Guide (EnviCom WG 256, ongoing)
- Sustainable Inland Waterways – A Guide for Inland Waterway Managers on Social and Environmental Impacts (InCom WG 203)

Third-party reports and other published or unpublished sources of information will include:

- Kunming-Montreal Global Biodiversity Framework (GBF)
- IPBES-IPCC co-sponsored workshop report on biodiversity and climate change (2021)
- Convention on Biological Diversity: Post-2020 Global Biodiversity Framework
- Convention on Biodiversity's (CBD) 2050 Vision for Biodiversity
- International Finance Corporation Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

4. Scope of work

To achieve effective maintenance and/or integration of biodiversity into navigation infrastructure, projects should aim for a net gain in biodiversity that is sustainable in the long-term. To do this requires commitment from project initiators, -owners and -developers to identify opportunities for habitat enhancement, creation, or restoration and integrate these into their infrastructure development thereby supporting long-term conservation goals. The lessons that can be learnt from existing projects that have resulted in conservation and/or net gain for biodiversity provide important decision-making advice for the future on topics such as the gains achieved against the effort taken and important information on factors that could lead to greater success. Pulling together such information would provide useful guidance for those considering future projects.

The development of a toolbox approach is considered to guide project developers to understand what could work for their projects in terms of biodiversity enhancements, what benefits such measures could bring and potential funding opportunities this may bring.

Benefits that can be accrued from implementing biodiversity enhancements are an important consideration. On top of the gains for biodiversity (which are the main drivers) there may be other benefits that result in positive outcomes for the project owner. In some cases, this could be improved public relations, quicker acceptance within the permitting process, access to green funding but also increased community support and involvement in a port's activities.

Therefore, an important step that the Working Group will consider in the process is not only the value of a species and habitat in its own right but also the ecosystem services that may be accrued. The methods of valuation of ecosystem services (Natural Capital Accounting) should be discussed.

5. Intended product

The output of the WG is a concise document with hands-on examples to ensure impact and be illustrated with artist impressions and photographs wherever possible to make it tangible and practical.

The report will provide discussion of the following questions/challenges:

- What is biodiversity and why is it (increasingly) important for the licensing of a project?
- How can biodiversity be incorporated into navigation infrastructure projects to include positive initiatives that can be implemented to both comply with relevant legislation and to work towards broader biodiversity initiatives.
- How can you value ecosystems to calculate biodiversity credits – financial tools are needed to encourage projects to create more biodiversity and potentially sell the credits to others who need the gains in biodiversity to gain consent for their projects.
- Which Environmental tools are needed for calculating biodiversity and ecosystem services valuation, for example, biodiversity metrics, natural capital accounting, etc.
- How do the various existing initiatives help to work towards gains in biodiversity for example: Working with Nature, nature- based solutions and Ecoshape, etc.
- What can be done to enhance biodiversity (include case studies) for waterborne transport infrastructure projects
- What would be a successful habitat creation/restoration project in terms of achieving enhanced biodiversity (is there a minimum size, how important is habitat and species connectivity to maintain a network for species interactions and why this is important),
- How important it is to effectively monitor, manage and maintain biodiversity enhancements to ensure their success

It is intended that the report produced would be a concise focussed report, completed within a relatively short period. This is because of the rapidly evolving initiatives for biodiversity and the importance of providing this guidance as soon as possible given the rapid declines in biodiversity and the need for immediate action to make a difference. Due to this requirement members should realise that there would be a requirement for a high level of activity initially and a series of focused meetings to provide a report within 12-18 months.

It is also intended that Working Group members give several guidance sessions (3-5), at PIANC conferences and meetings, on biodiversity and its importance for PIANC members during, and after, the report's development.

6. Working Group membership

Working Group members should include subject matter experts, e.g., consultants, contractors, academics, and representatives from the target audience regulators, and Port Authorities who are tasked with sustainable management of activities relating to waterway and port management. We also recommend including at least one member from a country in transition. As this topic spans many areas it is expected that there would be some involvement of other PIANC Commissions to gain a greater understanding of the topic. This could involve a member from each Technical Commission.

Members should have an interest/experience in eco-engineering, biology and ecology, biodiversity, habitat restoration, habitat creation, natural capital accounting, habitat management, port operations, Working with Nature and/or engineering feasibility of habitat creation.

7. Target audience

The report will be aimed at the following readers who would be involved in the planning, design, operation and maintenance of biodiversity projects:

- Port and waterway authorities
- Port and waterway scientists and engineers
- Environmental scientists including biologists and ecologists
- Investors
- Government and regulators

8. Relevance

8.1. Relevance to countries in transition, etc.

Ports all around the world form the significant economic backbone of global and local economy and almost all are in densely populated areas and surrounded by nature. Corporate social responsibility (including to enhance biodiversity to provide ecosystem services for local communities) is becoming more and more a basis for port policy and development as is shown in an increasing number of sustainability reports produced by ports in Europe, USA, South America, Asia, Africa and Oceania. The report will be written in a manner easily understood and relevant in both developed countries and countries in transition.

8.2. Climate Change and Adaptation

The report will consider the role, influences, and implications of climate change on biodiversity recognising that climate change adds another layer of pressure to the biodiversity challenge. By considering biodiversity sustainably for each project and Working with Nature there are opportunities for improving resilience to climate change. This could provide benefits for both nature and humans through the restoration or creation of habitats for species and subsequently by improving ecosystem services.

8.3. Working with Nature

Biodiversity is a key aspect of many Working with Nature and Nature Based Solution initiatives, notably in terms of the ecosystem service functions it provides, and hence offers substantial elements that enhance biodiversity. Working with Nature will therefore be a key initiative for the Working Group to consider.

8.4. UN Sustainable Development Goals

The WG report would contribute to the achievement of multiple UN Sustainable Development Goals, notably 13, 14 and 15 but also supporting 9 and 3:

- 13 (Climate action)
- 14 (Life below water)
- 15 (Life on land)
- 9 (Infrastructure, innovation, industry)
- 3 (Good health and wellbeing)